WHAT IS CLAIMED IS:

1. A method for producing core-shell type metallic nanoparticles, comprising:

providing a dispersion of a first metal as nanoparticles in an appropriate organic solvent;

providing a solution of a metallic precursor containing a second metal in an appropriate organic solvent, in which the second metal has a reduction potential higher than that of the first metal; and

combining the dispersion and the solution together to carry out the transmetalation reaction of the first and second metals,

whereby core-shell type metallic nanoparticles are formed.

2. A method for producing solid solution alloy type metallic nanoparticles, comprising:

providing a first solution of a thermally degradable metallic precursor containing a first metal in an appropriate organic

solvent;

providing a second solution of a metallic precursor containing a second metal in an appropriate organic solvent, in which the second metal has a reduction potential higher than that of the first metal; and

combining the first solution and the second solution together to carry out the transmetalation reaction of the first and second metals,

whereby solid solution alloy type metallic nanoparticles are formed.

3. The method according to claim 1, wherein a stabilizer is added to the solution of the metallic precursor containing the second metal.

4. The method according to claim 3, wherein the stabilizer includes compounds having following structures:

R-X

in which R is a straight or branched hydrocarbonate group having 2 to 22 carbon atoms and X is selected from a

isocyanate group, sulphonate group, phosphate group, carboxylate group, amine group and thiol group.

5. The method according to claim 1, wherein the first metal comprises a member selected from the group consisting of manganese, chromium, iron, cobalt, nickel, copper, silver, palladium, platinum and gold.

6. The method according to claim 1, wherein the first metal comprises at least two metals of core-shell type or solid solution alloy type.

7. The method according to claim 1, wherein the metallic precursor containing the second metal comprises at least one member selected from the group consisting of β-diketonate compounds, phospine compounds, organic metallic compounds, hydrocarbonate ammonium salt compounds of R_4N, in which R is a straight or branched chain having 1 to 22 carbon atoms or a chain containing a phenyl group, and the like.

8. The method according to claim 1, wherein the react ion temperature required for the transmetalation reactions is 50 to 300°C.

9. The method according to claim 2, wherein a stabilizer is added to the solution of the metallic precursor containing the second metal.

10. The method according to claim 9, wherein the stabilizer includes compounds having following structures:

R-X

in which R is a straight or branched hydrocarbonate group having 2 to 22 carbon atoms and X is selected from a isocyanate group, sulphonate group, phosphate group, carboxylate group, amine group and thiol group.

11. The method according to claim 2, wherein the first metal comprises a member selected from the group consisting of manganese, chromium, iron, cobalt, nickel, copper, silver, palladium, platinum and gold.

12. The method according to claim 2, wherein the first metal comprise at least two metals of core-shell type or solid solution alloy type.

13. The method according to claim 2, wherein the metallic precursor containing the second metal comprises at least one

member selected from the group consisting of β-diketonate compounds, phospine compounds, organic metallic compounds, hydrocarbonate ammonium salt compounds of R_4N, in which R is a straight or branched chain having 1 to 22 carbon atoms or a chain containing a phenyl group, and the like.

14. The method according to claim 2, wherein the react ion temperature required for the transmetalation reactions is 50 to 300°C.

15. Information recording media comprising a given substrate, and a magnetic thin layer of the metallic nanoparticles, wherein the thin layer of metallic nanoparticles is produced according to the method of any one of claims 1-14.

16. Chemical catalysts comprising as an active ingredient the metallic nanoparticles produced according to a method of any one of claims 1-14.

17. The catalysts according to claim 16, wherein the catalyst is used as nucleation sites for production of carbon nanotubes.

18. Medical therapeutic agents comprising the metallic nanoparticles produced according to a method of any one of claims 1-14 as an active ingredient.

19. Medical diagnosis agents comprising the metallic nanoparticles produced according to a method of any one of claims 1-14 as an active ingredient.

20. A single electron device comprising the metallic nanoparticles produced according to a method of any one of claims 1-14, wherein the metallic nanoparticles are aligned between two electrodes whereby the device has magnetic properties.

21. Information recording media comprising:

a given substrate,

a thin layer of a first metal at least partially coating surfaces of the substrate,

and a transmetal layer formed over the thin layer of the first metal by selective chemical vapor deposition of a metallic precursor containing a second metal, in which the second metal has a reduction potential higher than that of the first metal;

wherein the first metal comprises a member selected from the group consisting of manganese, chromium, iron, cobalt, nickel, copper, silver, palladium, platinum and gold.

22. The information recording media as recited in claim 21 wherein the first metal comprises at least two metals of core-shell type or solid solution alloy type.

23. Information recording media comprising as recited in claim 21, wherein the first metal coats the entire surface of the substrate.